Capabilities Based Planning Framework

27 Dec 2004

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Purpose & Agenda

Purpose

- To propose a coherent framework which defines and relates the essential elements of Capabilities Based Planning.

Agenda

- Defining the CBP Decision Space
- Building a Common CBP Language
- Linking Capabilities to Strategy, Concepts, and the ROMO
- Enabling a Data-Centric Approach
- Way Ahead

Defining the CBP Decision Space

CBP Communities of Interest

Education
JPME, JKDDC

Readiness
JQRR, DRRS
ESORTS, JRAT

Training
COCOM JMETLs,
Service / CSA
METLs,
JTS, JTIMS, JNTC,
JAEC

Ops Planning
OPLANs, TSC, IPLs,
Lessons Learned,
Adaptive Planning,
JSPS, GFMP

J7

Operational Plans & Joint Force Development

Strategy/Policy
NSS, NDS, JSPS

Concepts
Joint, Service,
Agency

Experimentation
S&T Exploration,
ACTD, Prototypes

Doctrine
JEL, JDEIS

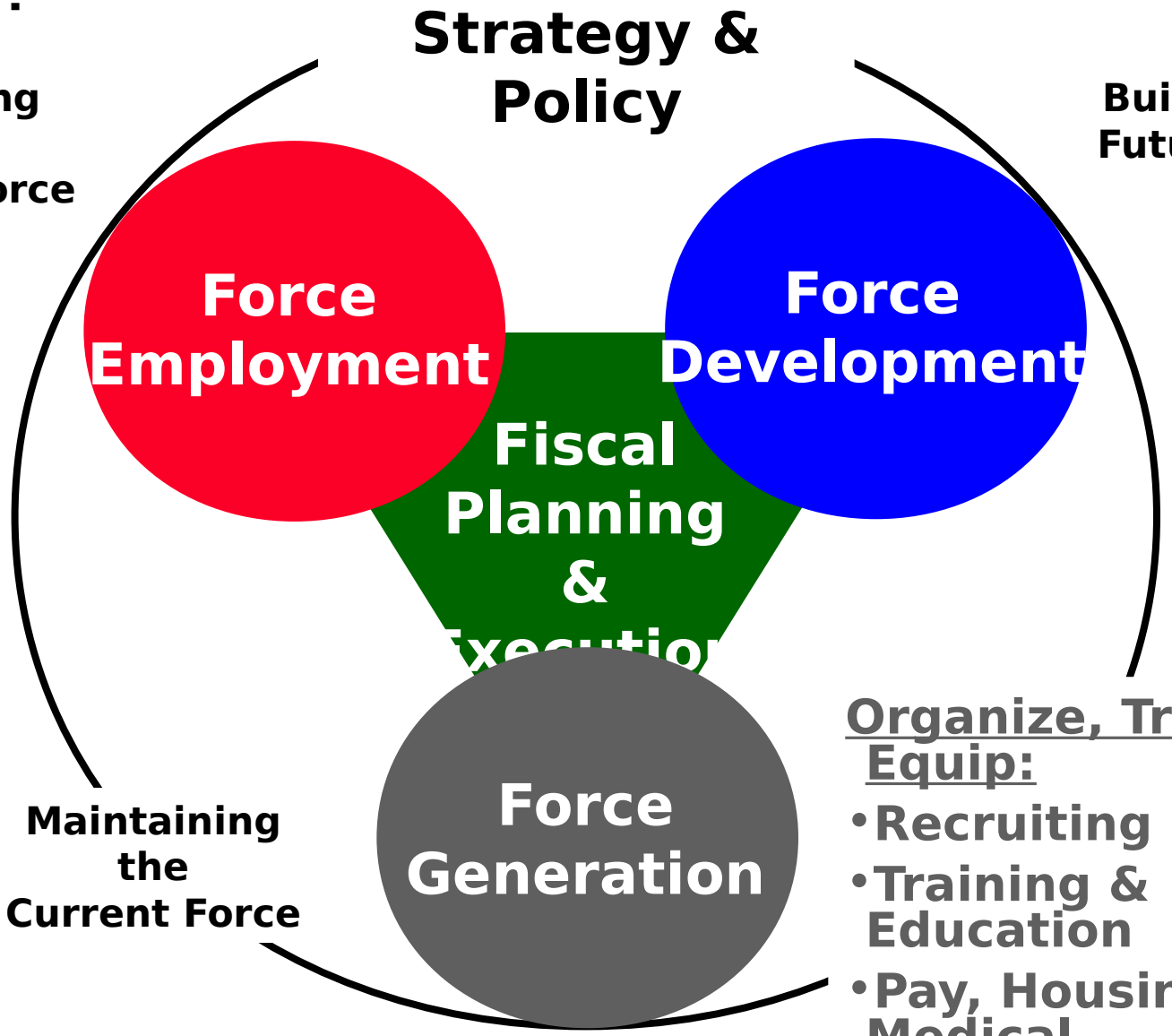
Future Force Planning
JCIDS, Analytic Agenda, EPP, Roadmaps,
DOTMLPF Improvements, Architectures,OA Studies
Risk Assessments, Acquisition, Operational Testing

J7 Engagement with Relevant Efforts

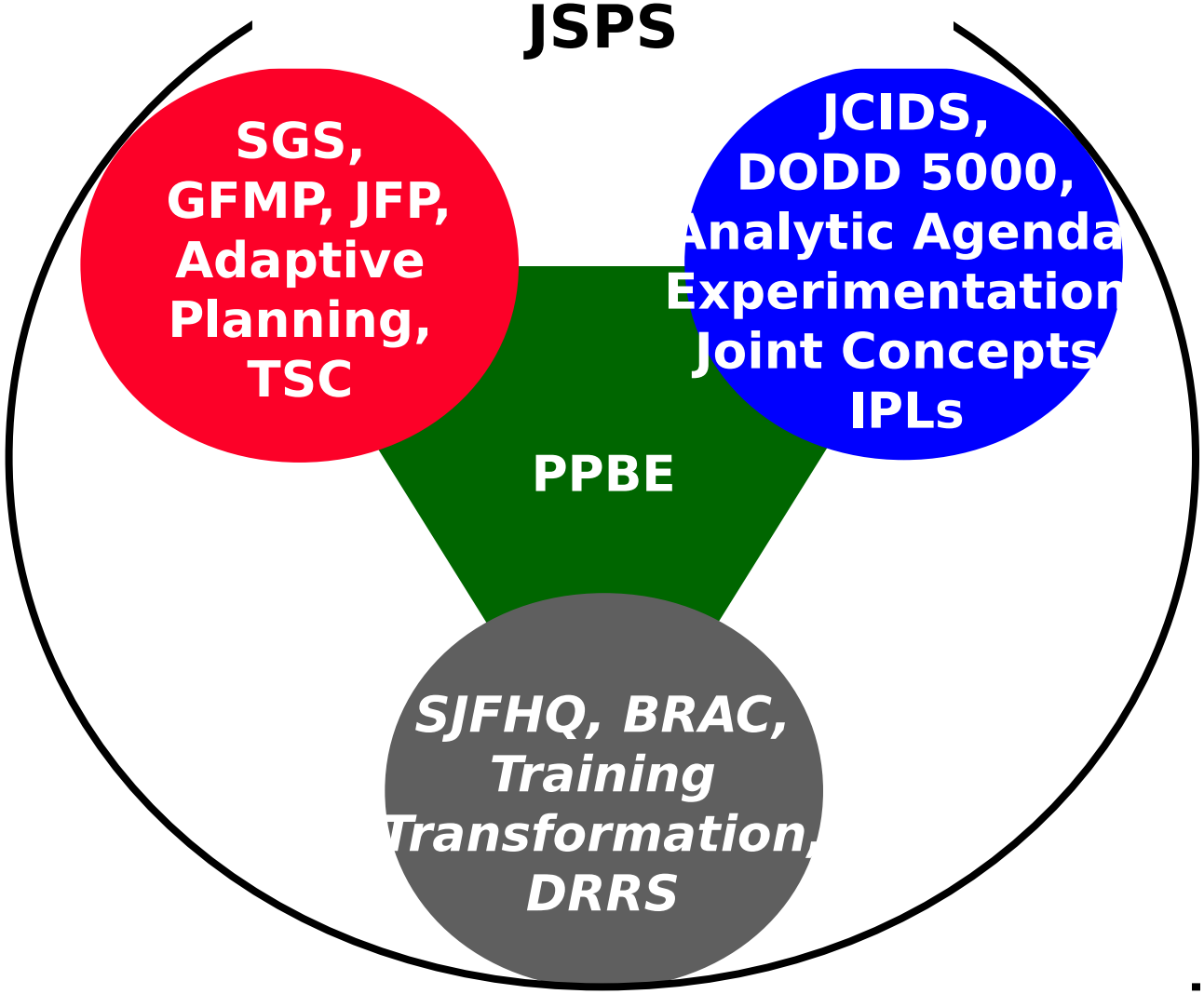
- SecDef - Aldridge Study (Oct 03)
- AUSCANZUKUS TTCP CBP Paper (Aug 04)
- Australian Joint Essential Tasks (May 03)
- Dept. of Homeland Security ODP UTL (Aug 04)
- FEMA METL (2002)
- NPS / TMCI - Concise Theory of Combat (1972-Ongoing)
- IDA - DRRS Study (Dec 03)
- OSD(OFT) - NCO / EBO Theory & Lexicon
- OSD(P/PA&E/AT&L) / J8 / J7 - Capability Working Group (ongoing)
- OSD(PA&E) - Group 2 Study (Dec 03)
- OSD(P) - TIM2 Effort: IA/MN METL for Training Transformation (ongoing)
- OSD(P&R) / PACOM - DRRS (ongoing)
- USAF / AFSAA - CRRA, MCL, AFTL
- USAF ACC - EBO Theory (Ongoing)
- ARL - Mission Means Framework (ongoing)
- Navy - ForceNet Architecture (ongoing)
- J7 – JOpsC, JOCs, JFCs, JICs, JCDRP (ongoing)
- J7 - UJTL 4.3 / 5.0 Revision (ongoing)
- J8 - JIAS & MMT (ongoing)
- J8 - OA ’05 Joint Force Capabilities Assessment Study (ongoing)
- JFCOM - JTTs & Multiple Architecture Efforts (ongoing)
- JFCOM / CSAIWG / Navy - CSFL (ongoing)
- JFCOM / CSAIWG / Army - COAL (ongoing)
- JFCOM - EBO Theory & COCOM Training Materials (Ongoing)

Blue = associated with a task list

Five Major DOD Decision Processes

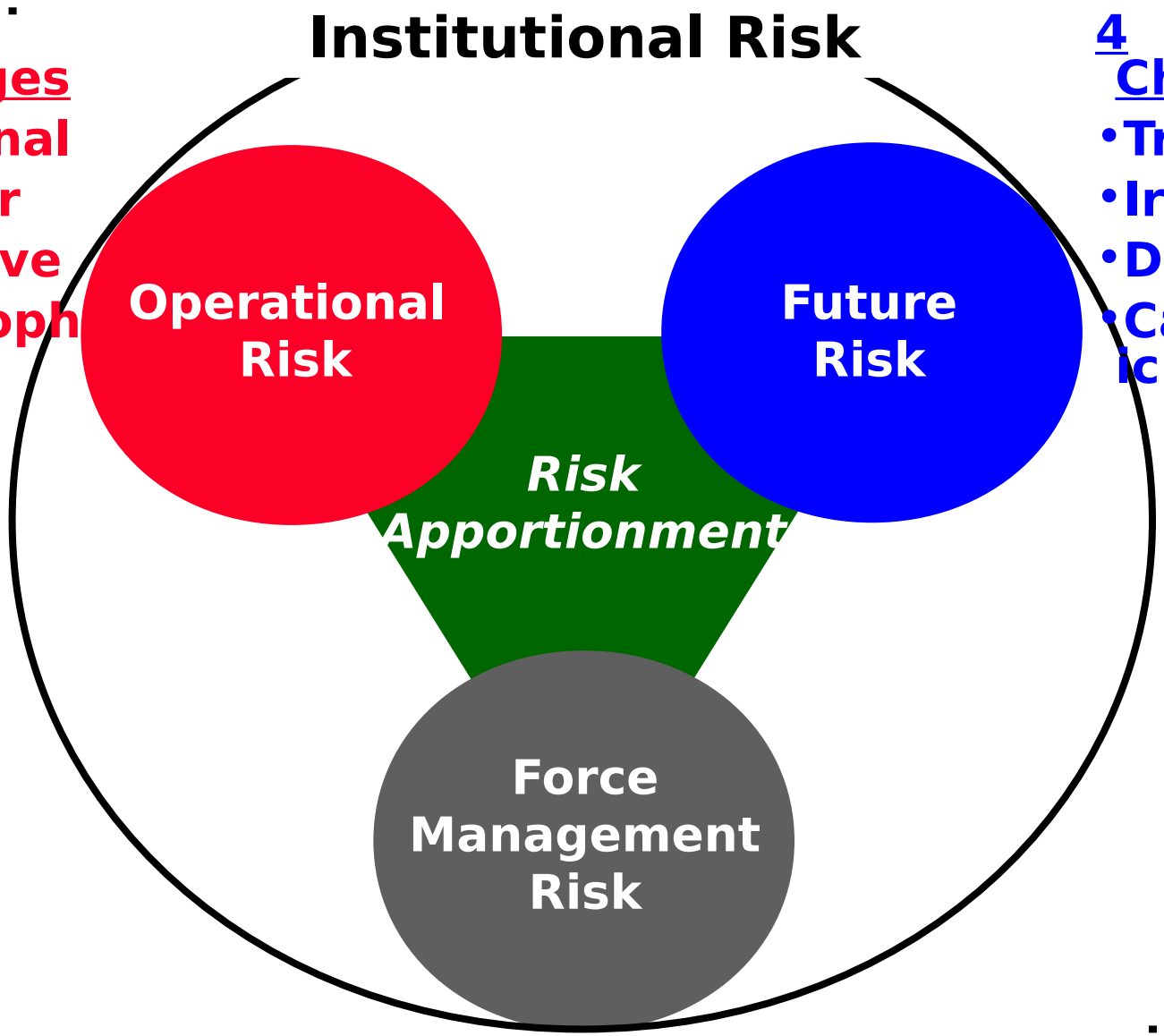


Transitioning to a CBA Methodology


NSS, NDS, NMS, JSPS
SGS, GFMP, JFP, Adaptive Planning, TSC
JCIDS, DODD 5000, Analytic Agenda Experimentation Joint Concepts IPLs
PPBE
SJFHQ, BRAC, Training Transformation, DRRS

DOD Risks & Challenges

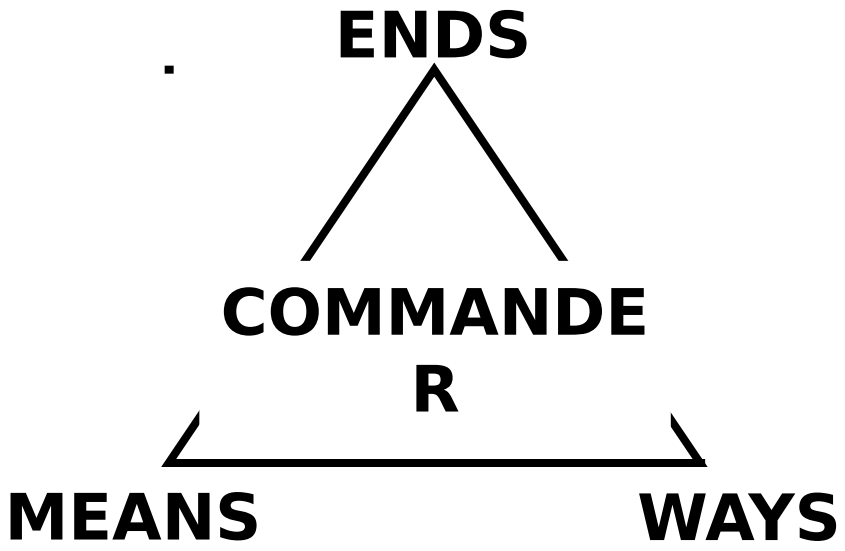
4 Challenges
- Traditional
- Irregular
- Disruptive
- Catastrophic



4 Challenges
- Traditional
- Irregular
- Disruptive
- Catastrophic

Building a Common CBP Language

Start With Doctrine

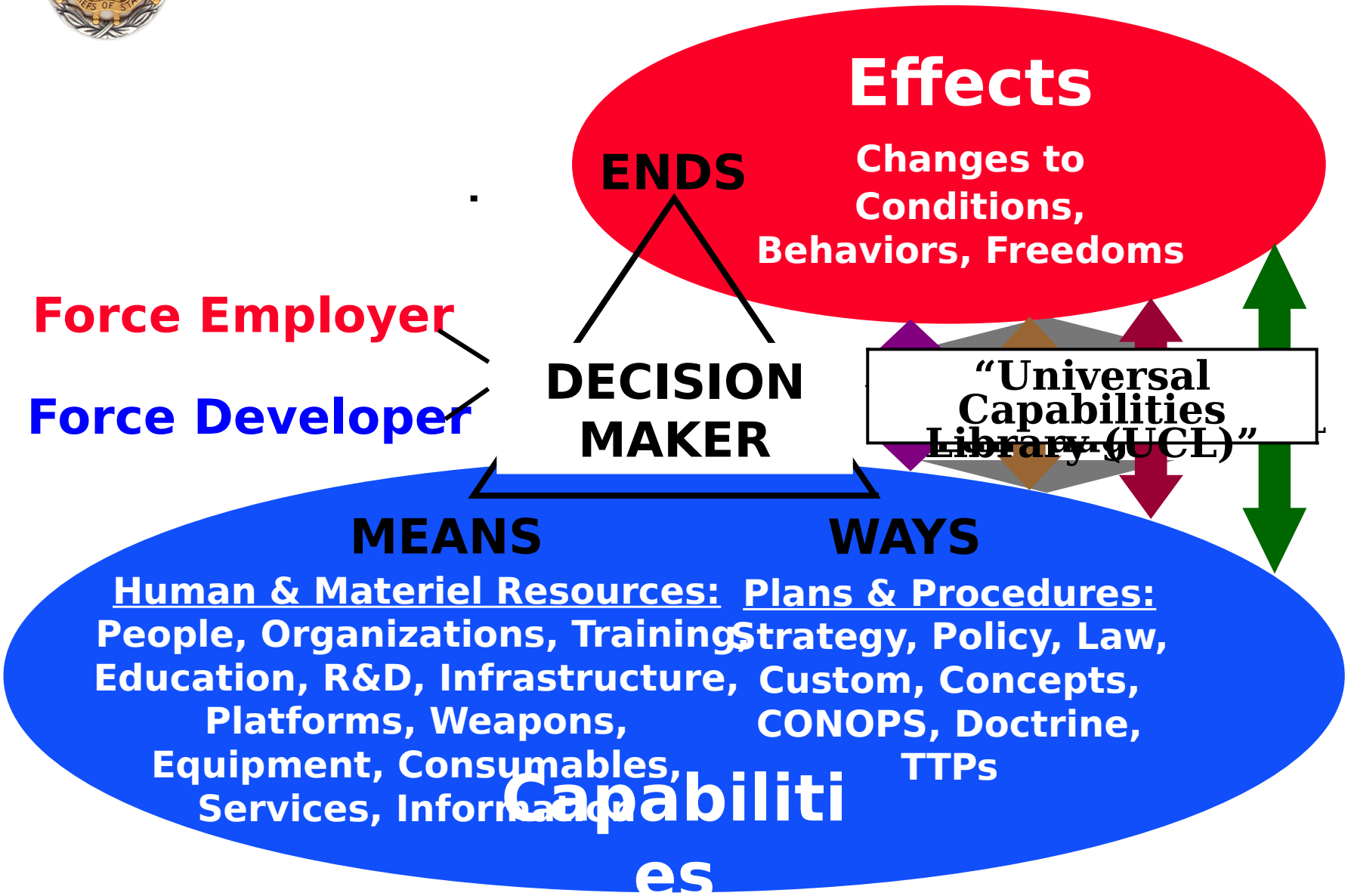


***OPERATIONAL ART* (JP 3-0):**

" . . . operational art requires commanders to answer the following questions:

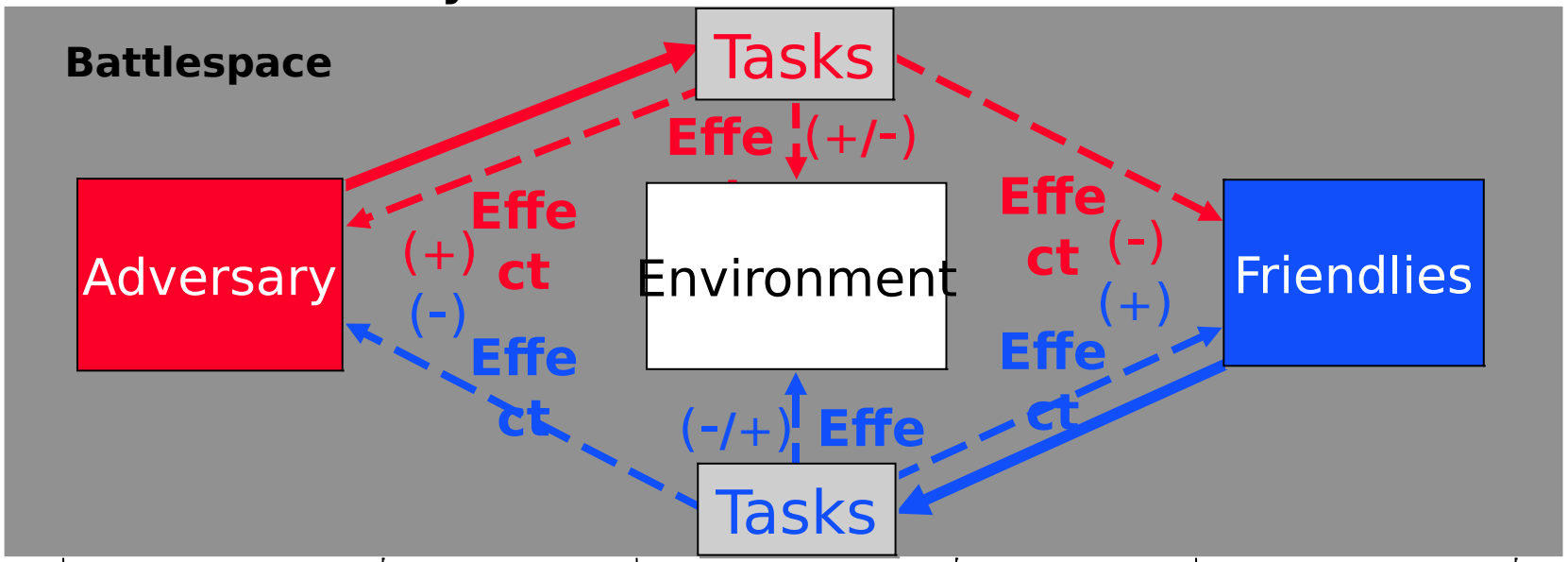
- **What military (or related political and social) conditions must be produced in the operational area to achieve the strategic goal? (Ends)**
- **What sequence of actions is most likely to produce that condition? (Ways)**
- **How should the resources of the joint force be applied to accomplish that sequence of actions? (Means)"**

Effects – Capabilities – Tasks



Operator's View

- **Performing *tasks* is a science – achieving desired *effects* is an art.**
- **The commander's CONOPs contains the broad flow of tasks to assigned units intended to achieve the desired effects and the required endstate. It is a theory that is tested in execution against an adversary and his CONOPs.**



Capability
- Means + Ways
- Freedom of Action
- Potential to Perform Tasks

Conditions
- Affect Quality / Capacity of Task Performance

Capability
- Means + Ways
- Freedom of Action
- Potential to Perform Tasks

CBP Terminology for Operators

- **Capability:** a combination of means (available resources) and ways (methods of employment) sufficient to perform an assigned task.
- **Task:** an action or activity derived from mission analysis, doctrine, standard procedures, or concepts that may be assigned to an individual or organization._
- **Standard:** a level of proficiency and sufficiency in performing a task.
- **Condition:** a variable of the battlespace (friendlies, adversaries, neutrals, environment) that affects task performance.
- **CONOPS:** a commander's overall concept and broad flow of tasks for an operation that shows how available capabilities will be applied to produce the effects necessary to achieve the mission endstate.
- **Effect:** a change to a condition, behavior, or degree of freedom.
- **Endstate:** the set of conditions, behaviors, and freedoms that defines achievement of the commander's mission.
- **Mission:** the purpose (objectives and endstate) and tasks assigned to a commander.
- **Measure:** quantitative or qualitative basis for describing the proficiency or sufficiency of task performance.

Primitives

Primitive: basic, not derived from anything else.

The American Heritage® Dictionary of the English Language, Fourth Edition

Four primitives are the fundamental building blocks:

- **Element:** a physical or mental thing that exists. (noun)
- **Attribute:** a quantitative or qualitative characteristic of an element or its actions. (adjective or adverb)
- **Action:** A behavior by an element that changes the state of any element. (verb)
- **State:** the set of attributes an element possesses at a point in time.

Derived from *A Concise Theory of Combat*, available at www.militaryconflict.org

Element & Attribute Examples

Physical Elements

- Humans, Animals, Machines, Environment

Physical Attributes

- Data (raw measurements)
- Geophysical location
- Size, Mass, Temperature
- Demonstrated Skills, Abilities, Readiness
- Firepower, Lethality
- Speed, Responsiveness
- Cover, Camouflage
- Mobility, Posture
- Relation or Aggregation by Location (node)

Mental Elements

- Humans, Animals

Mental Attributes

- Information (human interpretation of data), Knowledge, Understanding
- Emotion, Morale
- Will, Courage, Initiative
- Fear, Doubt, Self-preservation
- Conscience, Conviction
- Self-Awareness
- Concealment
- Imagination, Creativity
- Relation or Aggregation by Chain of Command (unit)

Deconstructing Tasks

UJTL OP 3.2.5.2 - Conduct Firepower Interdiction of Operational Forces

Agent Element	Action	Object Element
When assigned, will perform to degree that own, environmental, and object states permit. Attributes of readiness, ammunition supply, etc. will change.	Results in changes to states of Agent, Object, and Environment.	Will suffer losses according to susceptibility of initial state. May perform reactive actions.

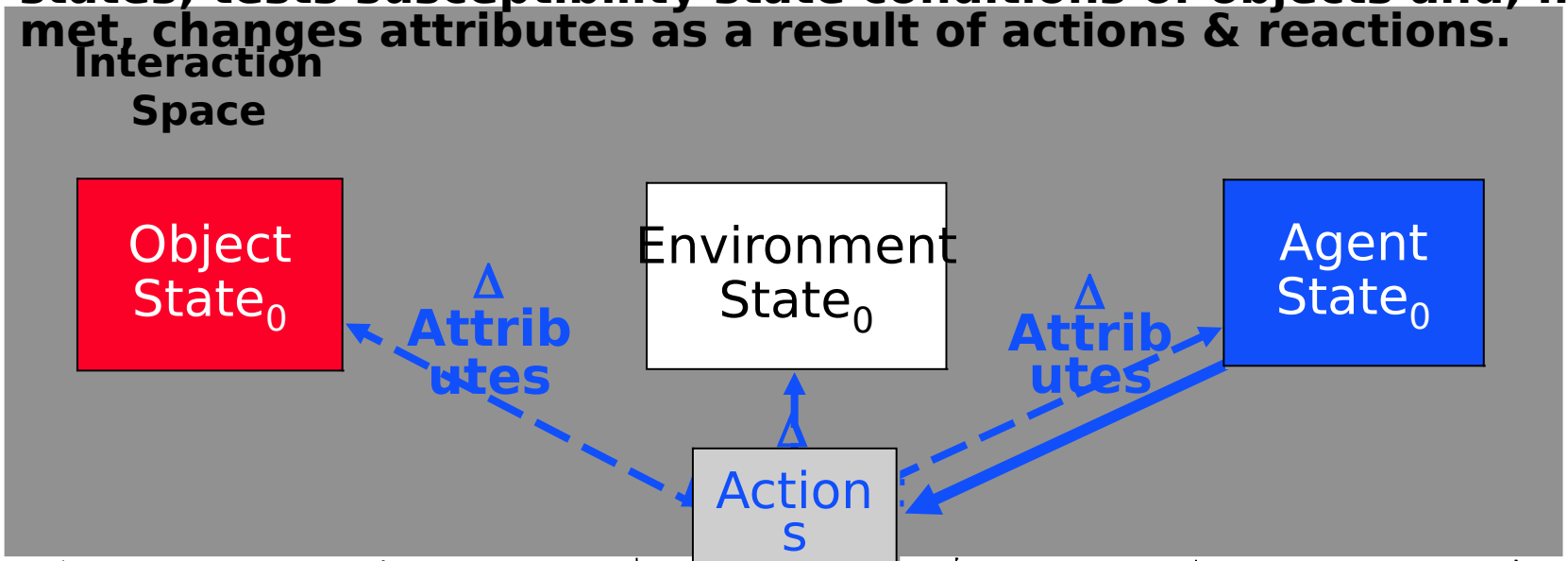
Agent is always an implied object

CSFL 1.1.1.7.1 - Intercept and Register Presence of Signals

Agent Element	Action	Object Element
When assigned, will perform to degree that own, environmental, and object states permit. Attributes of readiness, and raw data, etc. will change.	Results in a change to state of Agent only.	Likely no change to object attributes in this case

Data Architect's View

- State = set of elements + their attributes at a moment in time
- Actions change state by changing attributes (if conditions permit)
- A State Engine increments time; examines all elements and attributes; triggers actions and reactions whose state conditions are met; degrades or prohibits actions as limited by states; tests susceptibility state conditions of objects and, if met, changes attributes as a result of actions & reactions.



Object Susceptibility
- Elements & Attributes
- Reaction Queue
- Reaction Triggers
- Action Susceptibility Standards

Environment
- Elements & Attributes
- Action & Reaction Queue
- Action Standards
- Action Conditions

Agent Capability
- Elements & Attributes
- Action Queue
- Action Triggers
- Action Performance Standards

OBP Terminology for Data Architects

- **Classes:** physical/mental (all), agent/object (elements only)
- **State:** the set of attributes an element possesses at a point in time
- **Capability:** the set of all actions that an agent element may take as permitted by its state.
- **Susceptibility:** the set of all actions that can change an attribute of an object element as permitted by its current state.
- **Condition:** a range of states that affects performance of an action or an action's impact on changing an attribute.
- **Standard:** a specified level of proficiency and sufficiency in performing a task.
- **Effect:** a state change
- **Endstate:** the state that defines achievement of the commander's mission.
- **Mission:** the endstate and actions assigned to a commander.
- **Metric:** quantitative measure associated with an attribute.

Linking Capabilities to Strategy, Concepts, and the ROMO

Fundamental Military Capabilities (J7)

Functional

1. Command, Control, Coordination, Cooperation & Networking (C^4N)
2. Battlespace Awareness
3. Force Application
4. Force Projection & Sustainment
5. Force Protection
6. Information [Control] Operations
7. Public Affairs
8. Force Management

Operational

9. Civil Support
10. Homeland Defense
11. Strategic Deterrence
12. Shaping & Security Cooperation
13. Civilian Protection
12. Access & Denial
15. Non-Traditional Operations
16. Stability Operations
17. Land Control
18. Sea & Littoral Control
19. Air Control
20. Space Control

Fundamental Military Capability Examples

Functional:

1. **Command, Control, Coordination, Cooperation & Networking (C4N)** Leadership, Decision Making, SA/Common Operational Picture, Information Assurance, COA/Plan Development, Orders Dissemination, Mission Rehearsal & Execution, Collaboration, Liaison, Communication, Chain of Command & HQ Organization
2. **Battlespace Awareness** Collection & Monitoring (Enemy, Neutral, Friendly, Environment), Exploitation & Analysis, Modeling, Simulation and Forecasting, Knowledge Management, METOC
3. **Force Application** Kinetic & Non-Kinetic, Lethal & Non-Lethal, Precision & Non-Precision, Tactical Mobility
4. **Force Projection & Sustainment** Transportation, Theater/Strategic Mobility, APODs/SPODs/Basing, Supply, Distribution, Maintenance, Engineering, EOD, Medical, Religious Support, Mobilization, Deployment, RSOI, Prepo, Host Nation Support, Contracting
5. **Force Protection** AT/FP**,** CBRNE, Air & Missile Defense,
6. **Information [Control] Operations** PSYOP, EW, CNO, MILDEC, OPSEC, STO, Strategic Communication
7. **Public Affairs** Domestic & Foreign Public Information, Public Diplomacy, Media Relations, Response to Misinformation, Counter-Propaganda; Military Affairs: Internal Information, Combined/Joint Information Bureaus
8. **Force Management** (Strategy & Policy, PPBES)
    1. **Force Generation** Organizing, Training, Doctrine, Education, Leader Development, Recruiting, Manpower, Administration, Infrastructure
    2. **Force Employment:** GFMP, Operational Planning; Readiness, Global Posture, Command Relationships, Global Force Visibility

Fundamental Military Capability Examples

Operational:

9. **Civil Support** COG, MACA, MSCLEA, MACDIS, AT, CM, Counter-Drug Ops
10. **Homeland Defense** COOP, Security of Mobilized Force / Bases / Reach Back Infrastructure / National Infrastructure, Securing Domestic Approaches & Territory, CIP, Population Protection, National Missile Defense
11. **Strategic Deterrence** Dissuasion, Overseas Presence, Force Projection, Show of Force, Preemption, Global Strike, HDBT, Nuclear Options, Inducement Options
12. **Shaping & Security Cooperation** Assurance, Pol-Mil, Mil-Mil, DOD Support to Arms Control, DOD Support to Nonproliferation, Security Assistance, Multinational Exercises/Education/Training, Theater Security Cooperation Agreements
13. **Civilian Protection** Critical Infrastructure Protection, Combating WMD, NEO, Refugee & IDP Management
14. **Access & Denial** Operational Access, Forcible Entry, LOC Protection, Transit, Basing, Reconnaissance, Interdiction, Quarantine, Blockade
15. **Non-Traditional Operations** Special Operations & Reconnaissance, Unconventional Warfare, Direct Action, Counter-Terrorism, Counter-Proliferation of WMD, Foreign Internal Defense, Insurgency/Counter-Insurgency
16. **Stability Operations** Peace Keeping, Peace Enforcement, Security, Humanitarian Assistance, Foreign Consequence Management, Civil Affairs, Provide Basic Services, Environmental Cleanup, Humanitarian De-mining, Occupation, Nation Building, Civil Administration, Reconstruction, Transition

17-20. **Domain Control Operations (Land, Sea & Littoral, Air, Space)** Control Territory/Population/Resources, Raids, Conventional Strikes

Some Suggested Capability Descriptors

Target Domain:
- **Land** (urban, jungle, desert, mountains, underground, etc.)
- **Sea** (undersea, littoral, etc.)
- **Air** (low / med / high alt; slow / fast / supersonic / hypersonic)
- **Space** (exo-atmospheric, NEO, MEO, HEO, etc.)
- **Cyberspace** (computer networks, sensors, data)
- **Human** (information, reason, passion, morale, will)

Signature:
- **Overt**
- **Covert**
- **Clandestine**

Tools to better bound the specific capability being described.

Responsiveness to Tasking:
- **Persistent** (within 60 minutes)
- **Prompt** (within 24 hours)
- **Immediate** (within 10 days)
- **Rapid** (within 30 days)

Endurance:
- XX **Minutes**
- XX **Hours**
- XX **Days**
- XX **Weeks**
- **Indefinite**

Posture:
- **Forward Based**
- **Forward Deployed**
- **Pre-Positioned**
- **Expeditionary**
- **CONUS Deployable**
- **CONUS Dedicated**
- **Ready Reserve**
- **Mobilized Reserve**
- **Inactive Reserve**

Reach:
- **Local**
- **Homeland**
- **Intra-theater**
- **Inter-theater**
- **Global**

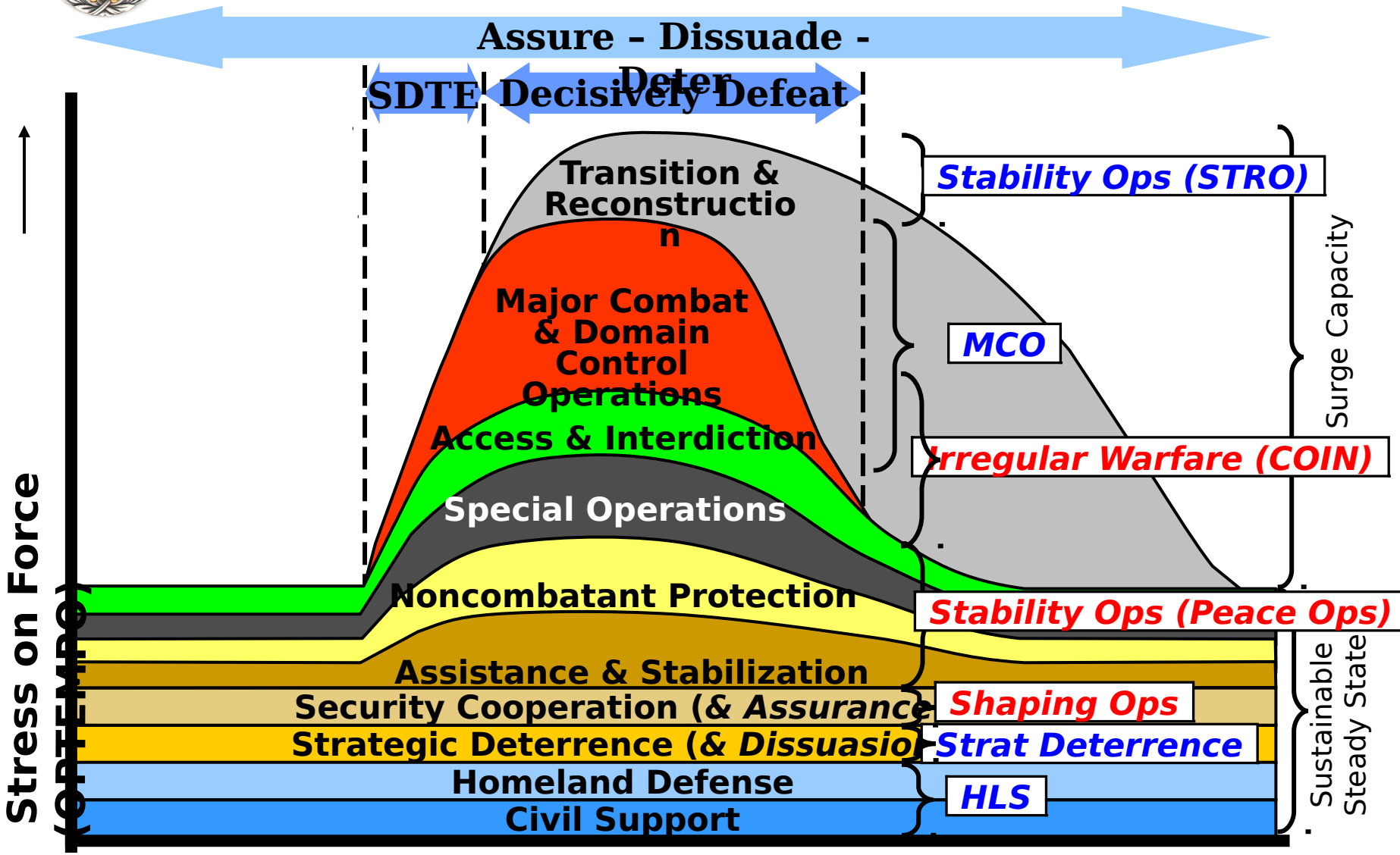
Environment:
- **Day / Night**
- **Weather** (winds, visibility, sea state, etc.)

Other:
- **Manned / Unmanned**

Functional Capabilities

Functional Capability Category Alignment			
Service Joint (JCIDS)	**Army**	**Air Force**	**Navy / Marines**
1. Command & Control	**Battle Command, C4ISR**	**C2, Comm**	**COP, Networks**
2. Battlespace Awareness	**C4ISR**	**S&R, Intel**	**ISR**
3. Force Application	**Fires / Effects**	**Force Application**	**Fires & Maneuver, Ordnance**
4. Force Projection & Sustainment	**Sustainment, CS/CSS, Basing**	**Force Projection, Sustain**	**Close/Assemble/ Deploy/Reconstitute, Integrated Logs, Prepo Afloat**
5. Force Protection	**Force Projection AAMD, SPOD/APOD Defense**	**Protection**	**Force Protection**
6. Information Operations	**Fires / Effects**	**Force Application**	**Fires**
7. Public Affairs			
8. Force Management **Force Development:** R&D, Concepts & Doctrine, Experimentation, Assessment & Analysis, Acquisition, Testing **Force Generation:** Manpower, Facilities, Recruiting, Administration, Education & Leadership, Training, Readiness,		**Create the Force** **Prepare the Force**	

Spectrum of Military Engagement



Operational Capability Links to JOCs & ROMO

JOCs Written

Stability Operations (Transition & Reconstruction)
Occupation, Nation Building, Civil Administration

Major Combat Operations
Raids, Conventional Strikes, Personnel Recovery, Forcible Entry, Seize/Defend Territory or Domain, Counter-Force Ops, Counter-Infrastructure Ops, Counter-Regime Ops, Swiftly Defeat The Enemy, Win Decisively, EPW Mgmt., Freedom of Navigation, LOC Protection, Operational Access, Interdiction, Blockade

Strategic Deterrence
Dissuasion, Presence, Force Projection, Show of Force, Preemption, Global Strike, Counter HDBT, Nuclear Options, Inducement

Homeland Security
Civil Support: Continuity of Government, MACA, MSCLEA, MACDIS, Antiterrorism, Consequence Management, Counter-Drug Ops; Homeland Defense: Continuity of Operations, Securing Approaches & Territory, CIP, Population Protection, WMD Defense, Air & Missile Defense

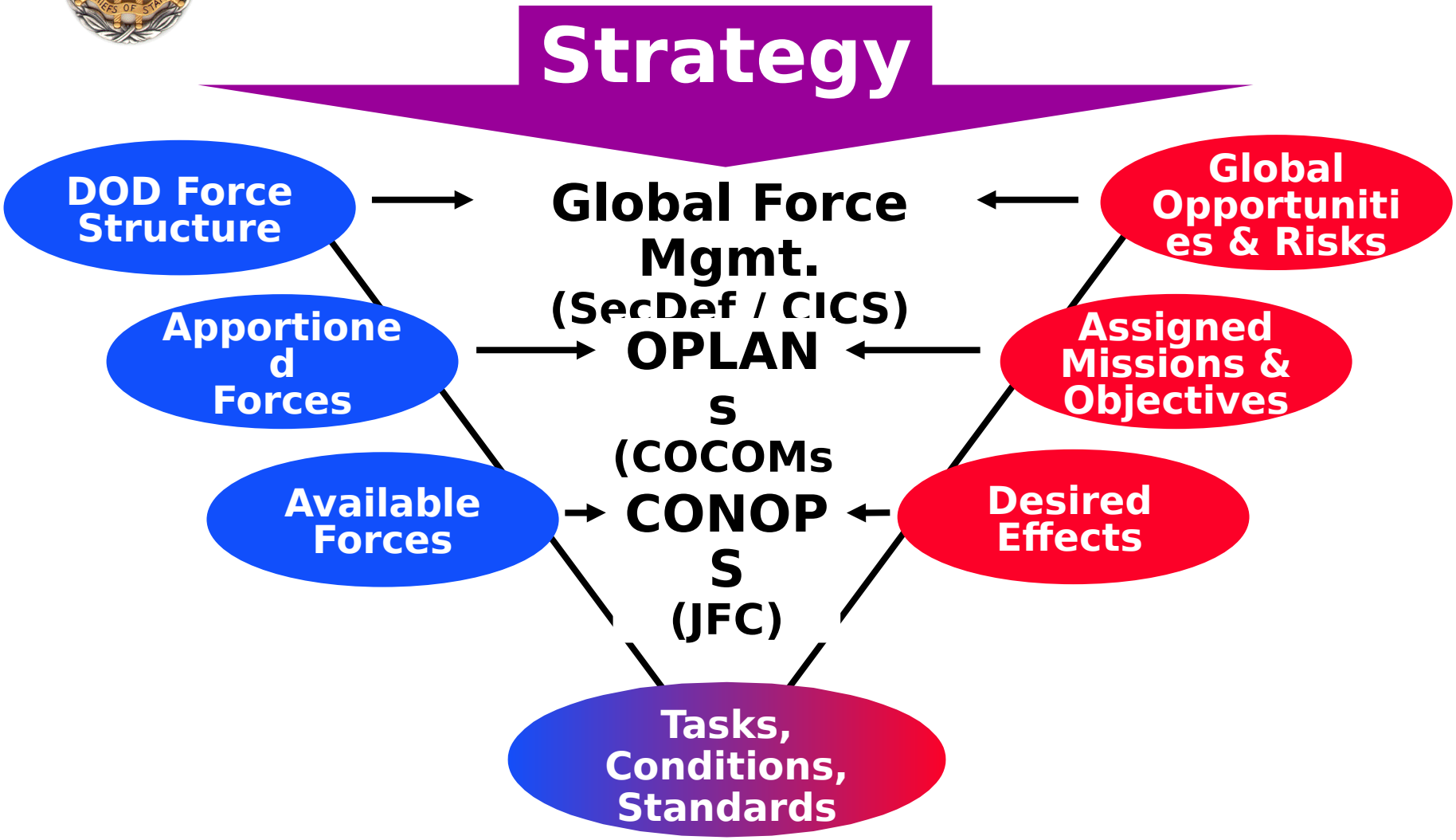
Potential JOCs

Stability Operations (Peace Ops)
Peace Keeping, Peace Enforcement, Security, Foreign Humanitarian Assistance, Civil Affairs, Basic Services, Environmental Cleanup, Humanitarian De-mining, Foreign Consequence Management, NEO, WMD Defense, Air & Missile Defense, Refugee & IDP Mgmt.

Irregular Warfare
Special Operations, Unconventional Warfare, Direct Action, Counter-Terrorism, WMD Interdiction, Support to Insurgency, Counterinsurgency, Foreign Internal Defense

Shaping Operations
Assurance, Security Cooperation, Pol-Mil Contacts, Mil-Mil Contacts, Arms Control, Counter-Proliferation, Security Assistance, Multinational Exercises, Multinational Education/Training, Basing & Support

Joint Force Employment Planning: Solving for Today's Plans



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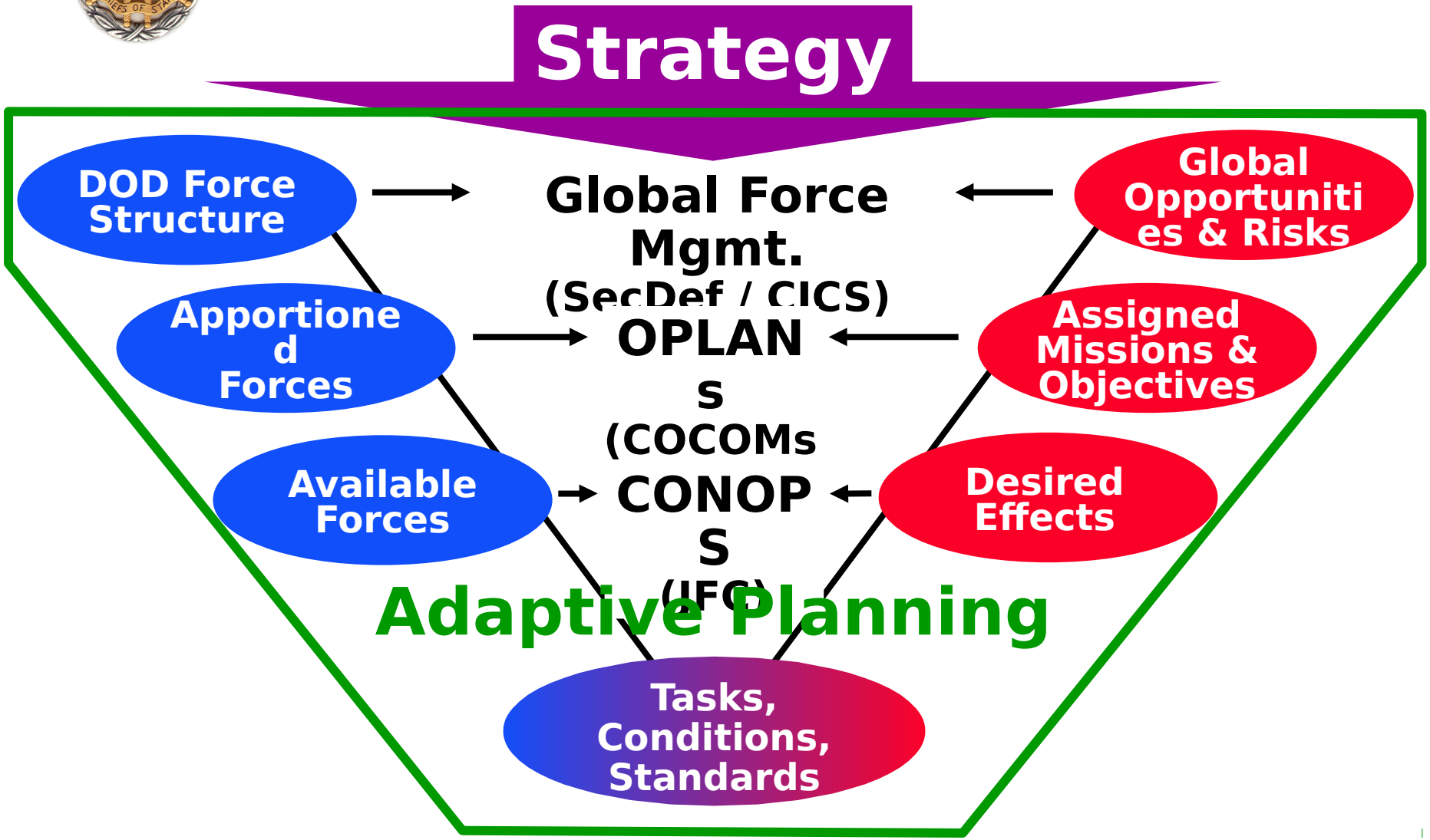
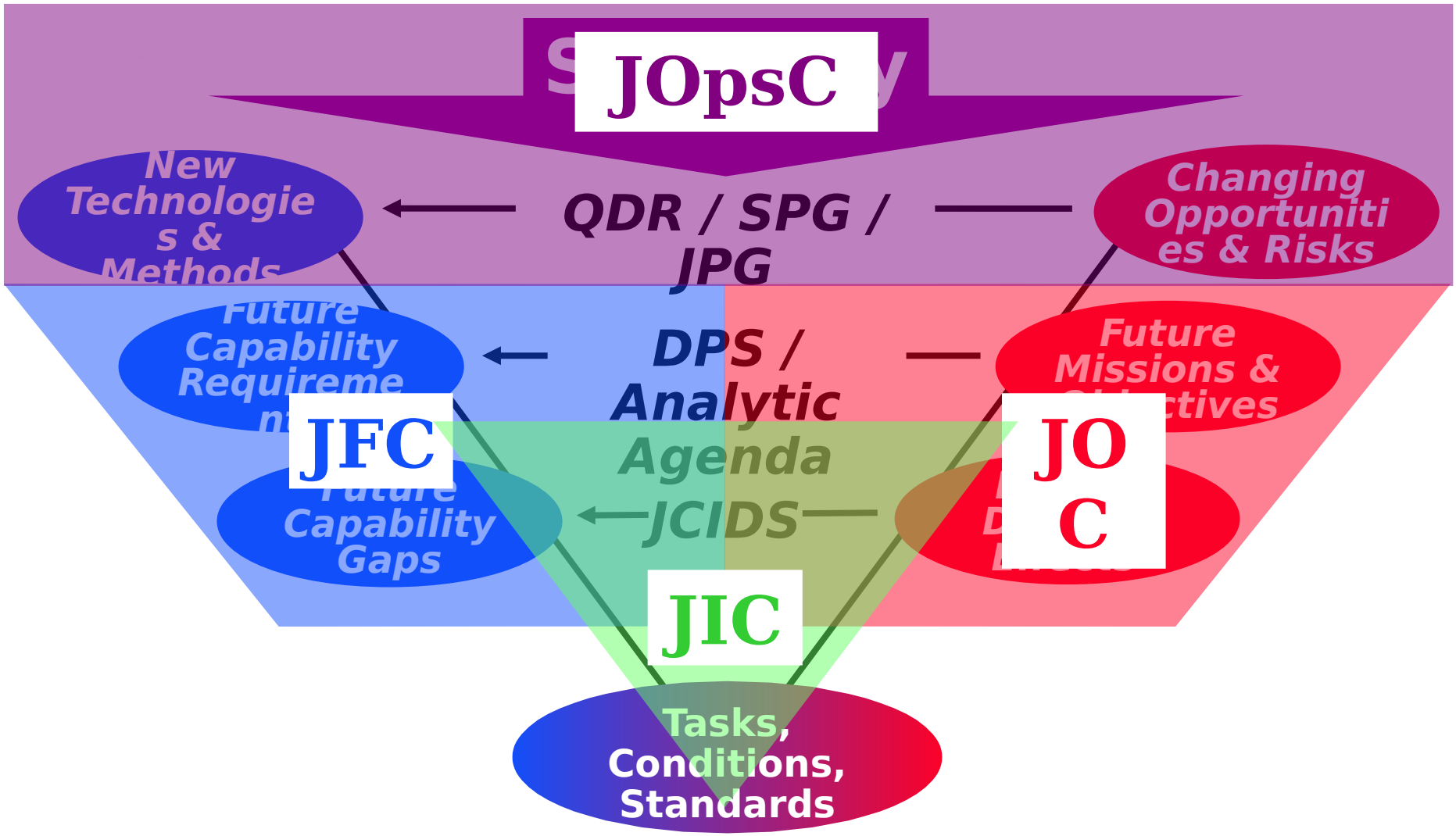
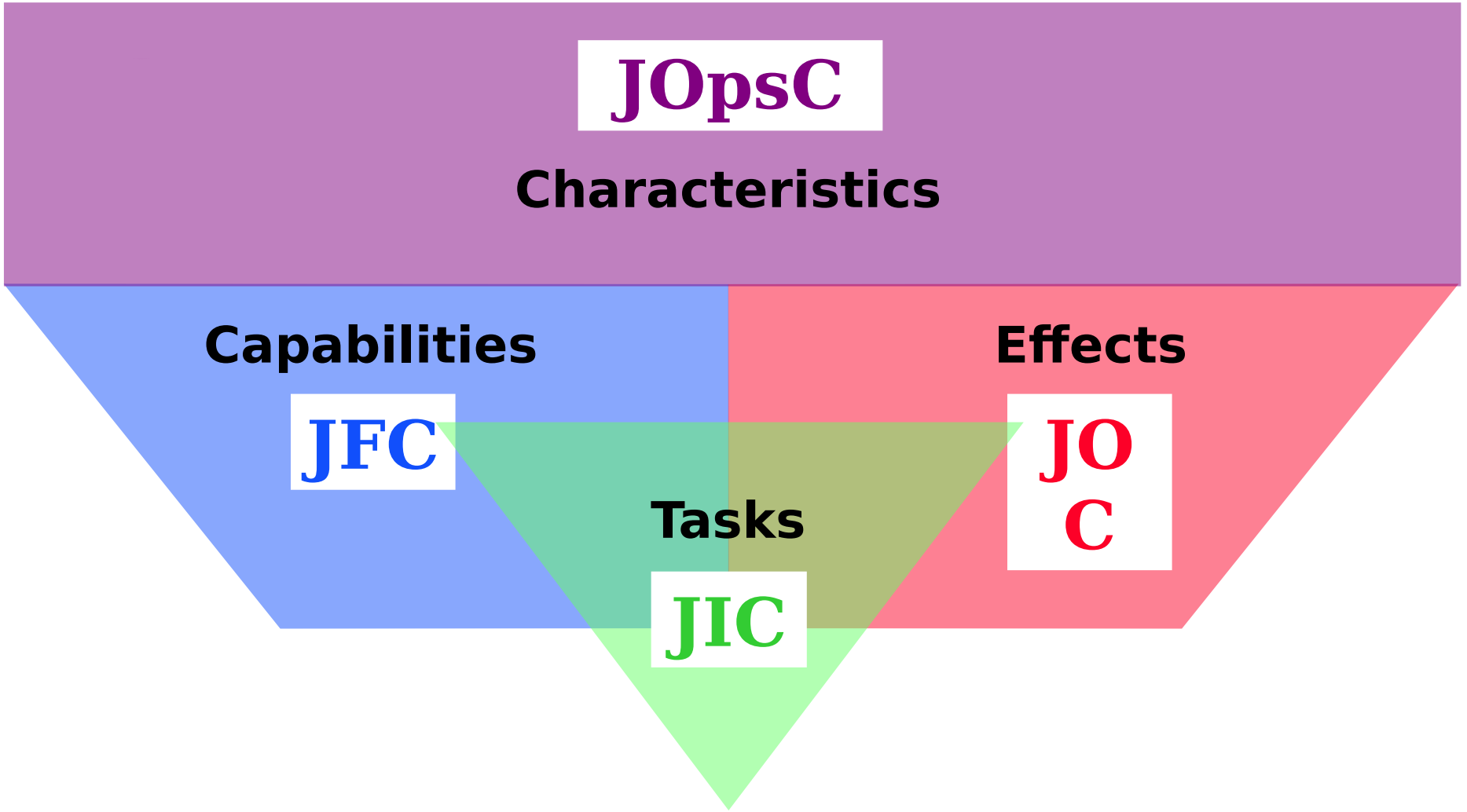


Joint Force Development Planning: Solving for Future Capabilities



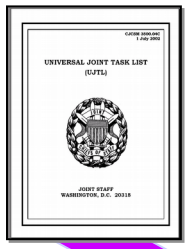
Means & Ways ← Assessment → Ends

Joint Concepts Deliverables

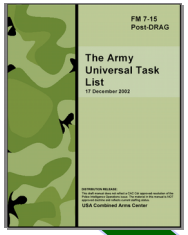


Enabling a Data-Centric Approach

Populating a Common Database

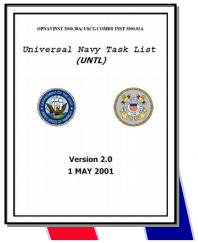


UJTL

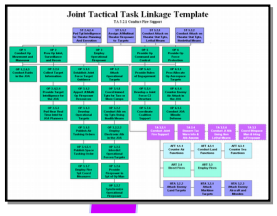


Army

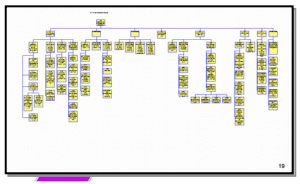
USAF



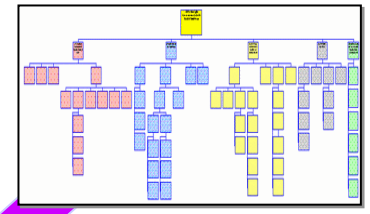
Navy / USMC



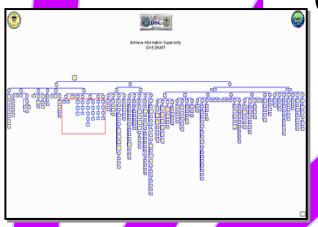
JFCOM JTTs



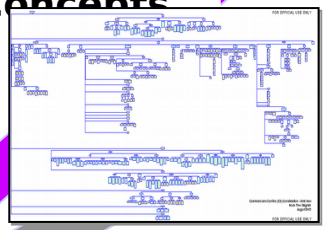
Joint Concepts



Service Concepts



Multinational



Interagency

Tasks, Conditions, Standards

UCL = *Universal Capability Library*

UCL Structure

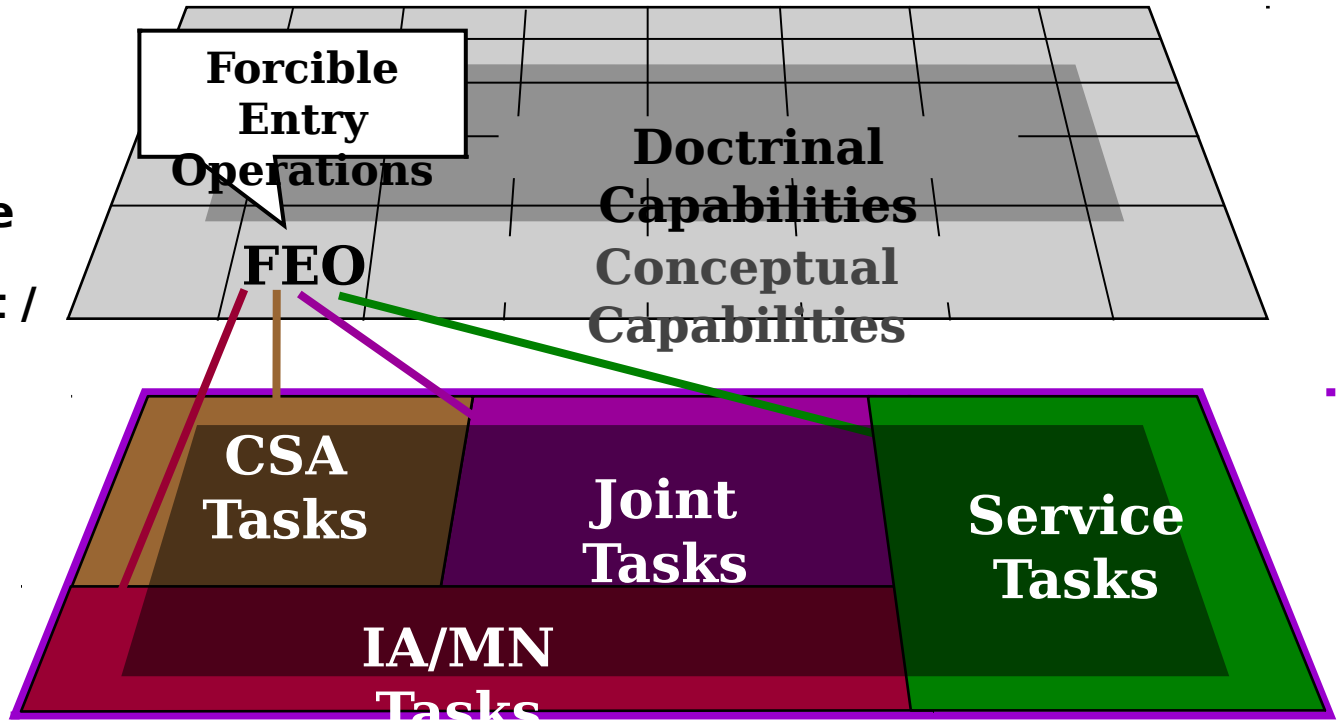
Common Data Repository

Capability Library

Master database of capabilities linked to current / planned / roadmapped Forces / Units / Equipment.

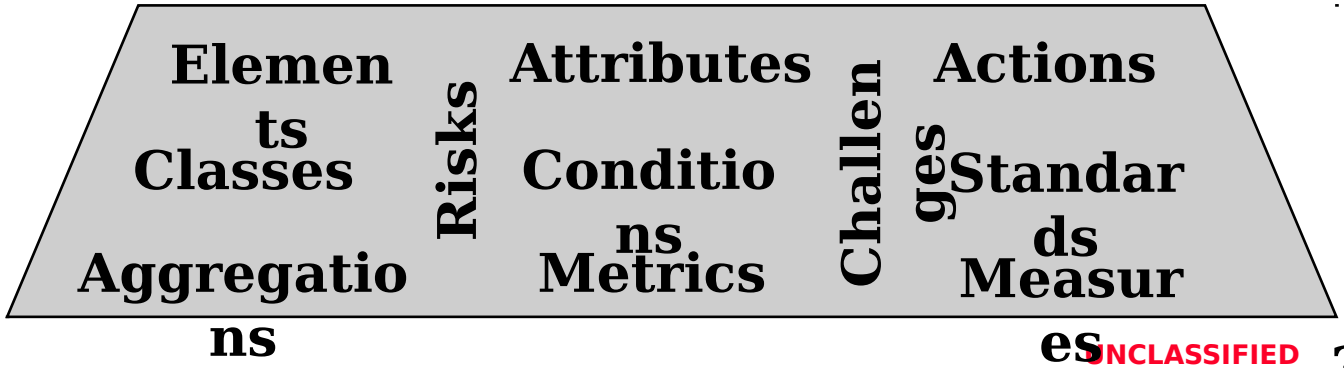
Task Library

Master database of all DIME doctrinal and conceptual tasks



Architecture

Necessary detail and structure to satisfy machines and models



Way Ahead

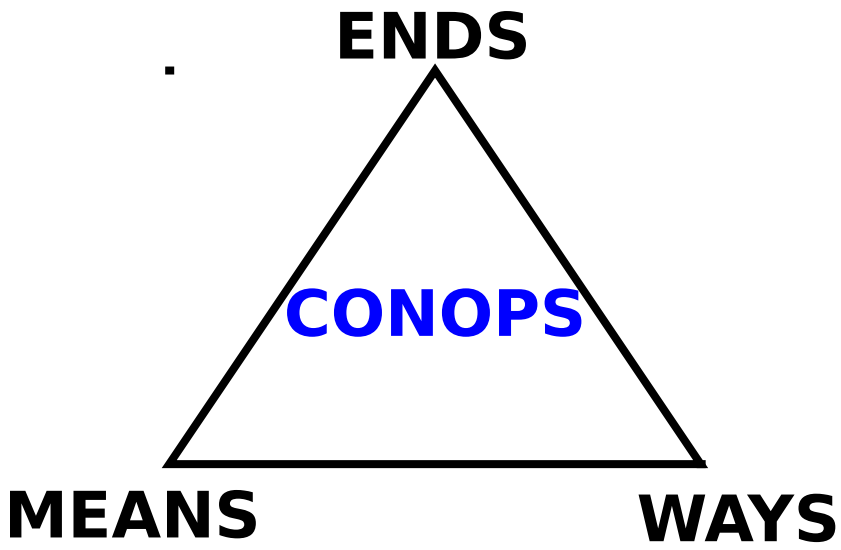
Opportunities for Collaboration

- Jan – Now: J7 outreach via workgroups, email, & individual briefs
- http://www.dtic.mil/jointvision/capabilities.htm
- http://jdeis.cornerstoneindustry.com
- 20 April: JCAC Conference, Arlington
- 4-6 May: JFCOM Tidewater Architecture Conference, Suffolk
- 25-27 May: OSD(P) TIM2 IA/MN METL Conference, NDU
- 22 June: J7/J8 JIC Writer's Workshop, Arlington
- 30 June: OSD CBP Workshop 1, IDA Arlington
- 7 July: UJTL After Next Conference 1, JFSC Norfolk
- Aug: J7 Concept Development & Revision Plan to CJCS / SecDef (Lexicon)
- 30 Sep: OSD CBP Workshop 2, IDA Arlington
- Oct 12-14: JCAC Conference, PACOM
- Oct 18-21: MORS CBP Conference at IDA, Arlington
- 10 Nov: UJTL After Next Conference 2, JFSC Norfolk
- J8-led JFCA effort (ongoing)

Backups

CONOPS Tests / Risk Areas

Adequate:
Achieves Ends



Feasible:
Executable within Means

Acceptable:
Cost-Effective

Derived from JP 5-0 *Joint Campaign Planning*

Capability Library Recommendations

DO NOT impose hierarchies

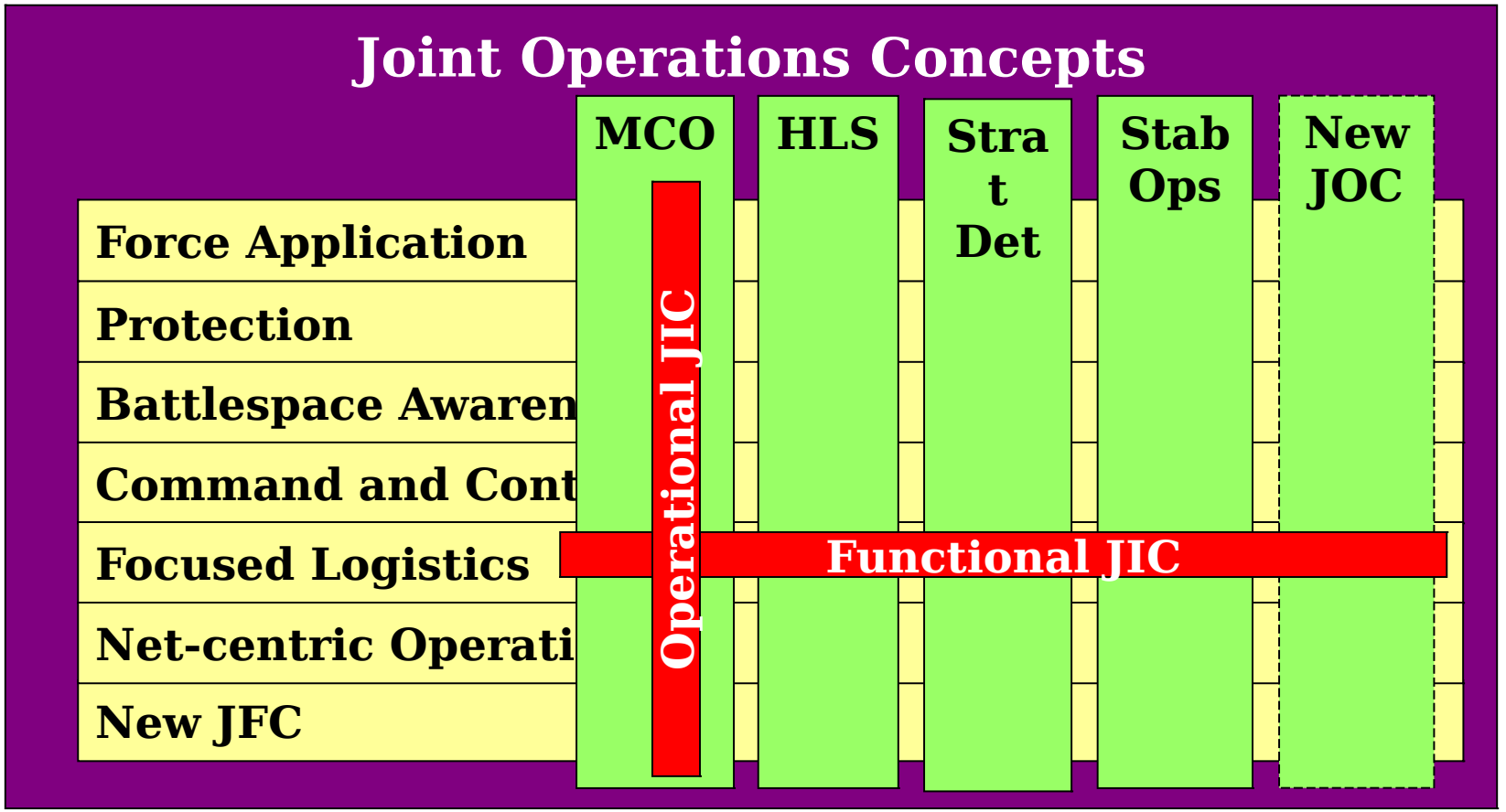
- **We must shift from book publishing paradigm (outline, chapters) to an online database paradigm (metadata tags, dynamic sorts, searches, filters)**
- **Designing hierarchies requires preconceived notions about what criteria is more valuable or useful for segregating elements.**
- **Hierarchies constrain to certain combinations of discriminators**
- **Hierarchies can hide data (folders, subfolders, sub-subfolders)**
- **UK CBP experience shows hierarchies can be optimized for specific purposes, but lack broad utility, thus requiring frequent changes or alternate versions**

DO NOT require mutual exclusivity (at least in operational categories)

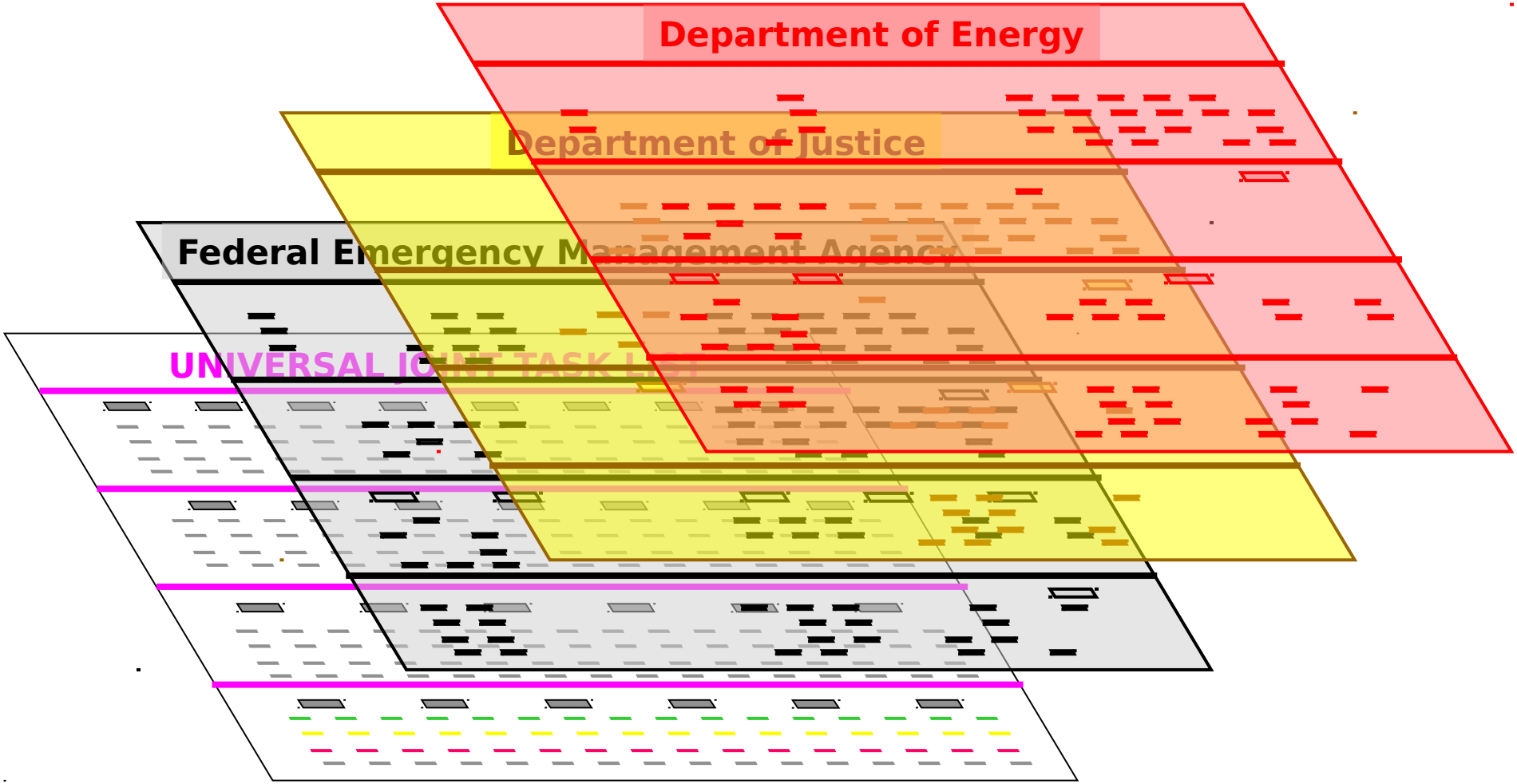
- **No real force / unit / equipment / system falls entirely within any category**
- **Requires tremendous intellectual contortions to comply**

Concept Relationships

Strategy



Rectifying Tasks from Many Sources



Courtesy of Mr. Cliff Krieger
DRC

Force Employment Decisions

SecDef / CJCS

How to best ***manage and posture*** DOD assets to support ***national interests*** and mitigate ***risks***?

COCOMs

How to ***prepare*** joint forces for ***campaigns*** and ***operations***?

Joint Force Commanders

How to ***employ*** a joint force achieve desired ***objectives*** and ***effects***?

Force Development Decisions

SecDef / CJCS

What ***top-down investment guidance*** is needed to ensure DOD optimally addresses ***future strategic challenges***?

COCOMs

What ***range and depth of joint capabilities*** will my successors need?

Services

DoD Agencies

SOCOM JFCOM

What are the ***achievable technologies, and methods*** of the future force?

What is a Framework?

Ontology:

An explicit formal specification of how to represent the *objects, concepts and other entities* that are assumed to exist in some area of interest and the *relationships* that hold among them.

- The American Heritage® Dictionary of the English Language, Fourth Edition

Fundamental Military Capability Areas

Functional

1. Battlespace Awareness
2. Command & Control (C2)
3. Net-Centric
4. Force Application
5. Logistics
6. Force Protection
7. Force Management
8. Training

SPG OA 05 Study
Joint Force Capabilities Assessment (JFCA) (Sep JSAP)

Operational

9. Strategic Deterrence
10. Homeland Defense
11. Civil Support
12. Access & Interdiction
13. Air/Space Control Operations
14. Maritime/Littoral Control Operations
15. Land Control Operations
16. Special Operations
17. Information Operations
18. Noncombatant Protection
19. Assistance & Stabilization
20. Reconstruction & Transition
21. Shaping & Security Cooperation